

Application No.: 10/089,577
Amendment Date: March 10, 2005
Amendment Under 37 C.F.R. § 1.312

Amendments to the Specification:

Replace the paragraph beginning on page 7, line 4 with the following paragraph:

FIGs. 1A and 1B and FIGs. 2A and 2B, respectively, are side elevation and top plan views of a pipe storage and handling system 10 according to this invention. The system includes a horizontal pipe racker subsystem 11 which is supported on the main deck 12 of a deepwater drillship by a substructure 13; it is within the scope of this invention to locate racker 11 directly on deck 12 or upon such other foundation as may be appropriate to the nature and location of the operations supported by the racker and other associated structures described below. In the preferred arrangement depicted, the racker substructure has a height on the order of twenty feet (6.1 meters). Racker 11 is shown to be located in the drillship forward of a drilling rig 15 which is supported on the vessel main deck by its own substructure 16 which locates a floor 17 of a drilling platform a desired distance above the main deck. Drilling rig 15 is located over a vertical passage 14 through the drillship hull. The racker substructure serves, among other things, to elevate racker 11 above main deck 12 adequately that the path of fore-and-aft movement of a drill pipe skate cart assembly 18 is horizontal and is substantially at the same height as the drill floor above the main deck. The skate cart assembly provides a carriage which transports drill pipe stands in a ~~fore-and-aft~~ fore-and-aft direction within system 10. A skate truss 19, which supports the skate cart in its movement, preferably along the vessel's longitudinal centerline, extends from the forward end of the racker to the drill floor. As shown in FIG. 1A, a portion 21 of the skate truss 19 just forward of the drill rig can be removable to enable a transversely movable bridge crane 22 to be used to move a blowout preventer, or other equipment as needed, into position on the vessel centerline before being moved rearward into alignment with a vertical well centerline 23, i.e., the drilling axis as defined in the drilling rig. The removable portion of the skate truss, when in its installed position shown in FIG. 1A, preferably is supported at its opposite ends on the elevated athwartships rails and rail supports 16 provided for crane 22.

Replace the paragraph beginning on Page 19, line 24 with the following paragraph:

FIG. 17 shows a presently preferred arrangement for securing the lower end of a bridge crane lift column 45 from movement when the lift column is stowed when at its lowest position in the bridge crane. A dummy section 98 of drill pipe is supported in a horizontal fore-and-aft

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position outboard of the adjacent vertical 94 and angular 95 drives for a sleeper indexing drive shaft 60. The pipe dummy section is located vertically below the place occupied by a corresponding magnetic lifting head when a bridge crane is in its stowed position as described above. The dummy pipe section is carried on a support bracket 99 mounted to the outer face of the racker base. The magnetic lift head 47 carried by the lift column can make contact with the top of the dummy pipe section, and a mechanical safety latch 105 associated with the magnetic lift head can be engaged around and below the dummy pipe section. Such forms of contact with the dummy pipe section cooperate to lock the lower end of the lift column to the dummy pipe section. A drill pipe dummy section preferably is provided ~~for~~ for each lifting head in each bridge crane at spaced locations along the outboard sides of the racker base.

Please replace the paragraph beginning on page 21, line 21 with the following paragraph:

The structures and mechanisms of a presently preferred pipe storage and handling system are constructed for operation in the temperature range of 14°F to 100°F (-10°C to 38°C). Those structures and mechanism reflect three different sets of environmental conditions, namely; operating conditions in which heave motions of +/- 3.7 meters at 8 second period, roll motions of +/- 4° at 12 seconds, and pitch motions of +/- 4° at 9 seconds, are tolerable; waiting on weather conditions (in which system components are stowed in their normal secure and stowed positions) of ~~+/- 6.0~~ +/- 6.0 meters heave at 9 seconds, +/- 10° roll at 12 seconds, and +/- 6° pitch at 10 seconds; and survival conditions (sea fastenings in place or engaged) of +/- 8.3 meters heave at 10 seconds, +/- 35° roll at 15 seconds, and 10° pitch at 10 seconds. Also, the system components are sized to withstand loads associated with drillship motions during transit of 36 feet heave, 25° roll and 10° pitch at periods of 13-15 seconds.

Please replace the paragraph beginning on page 22, line 26 with the following paragraph:

Controls for the sleeper indexing mechanisms preferably are located at the forward secondary control console which is so positioned that the operator can see clearly into both pipe bays or can move easily to see into either of them. The sleeper-related controls at that console preferably include controls for the following functions: select port or starboard bay, select drill

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pipe layer (1, 2, 3, ...), stowed or deployed position of the sleepers for each pipe layer, commanding stow or deploy sleeper motion, an alarm (sound and light) which indicates that one or more sleepers did not respond to a positioning command, and a sleeper lock useful when personnel are present ~~or~~ on racked pipe stands. The sleeper stow and position commands signals preferably are also provided to the crane control programming pertinent to the sleeper control interlock.